

# PATENT ABSTRACTS OF JAPAN

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## (54) MANUFACTURE OF SEMICONDUCTOR DEVICE

### (57) Abstract:

PURPOSE: To secure a good bonding property of the fine metal wires to the leads by a method wherein before the process of bonding of the fine metal wires and the leads a laser beam is irradiated on the irradiating area in a state that the irradiating area is being interrupted from the air and the bonding areas of each lead are locally softened by applying heat.

CONSTITUTION: Before the wire-bonding process leads 1 are placed on a processing station 5 this processing station 5 is carried in a container 4 from a carrying-in port 4a the carrying-in port 4a and a carrying-out port 4b are blocked up the air in the container 4 is exhausted from an exhaust port 4ca laser beam 3 from a laser oscillation gun 2 is irradiated on the bonding areas of each lead 1 on the processing station 5 through a glass transmitting window 4d in a state that the degree of vacuum in the container 4 is set at 10<sup>-1</sup>W10<sup>-4</sup> torrs and the said bonding areas are softened by applying heat. The leads 1 are ones to be connected with the electrodes on a semiconductor chip using copper wires by an ultrasonic wave combined thermocompression bonding system for example. By this way a good bonding property of the fine metal wires to the leads can be secured.